DEPARTMENT OF AGRICULTURE APPROPRIATIONS, 1953

MONDAY, MARCH 31, 1952

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The subcommittee met at 10:30 a. m., pursuant to recess, in room F–39, the Capitol, Hon. Richard B. Russell (chairman of the subcommittee) presiding.

Present: Senators Russell, Hayden, Cordon, and Ellender.

AGRICULTURAL RESEARCH ADMINISTRATION

WHEAT RESEARCH PROGRAM

STATEMENTS OF FLOYD ROOT, WASCO, OREG., PRESIDENT OREGON WHEAT GROWERS LEAGUE, AND DON McKINNIS, LaGRANDE, OREG., PRESIDENT, PACIFIC-NORTHWEST COUNCIL

BACKGROUND OF WITNESS

Senator RUSSELL. The committee will come to order.

At the request of Senator Cordon, we will open the hearing this morning with the testimony of Mr. Floyd Root, president of the Oregon Wheat Growers League, and Mr. Don McKinnis, president of the Pacific-Northwest Council.

These gentlemen desire to present to the committee the situation in the great Pacific Northwest, which is damaging to the wheat growers of that area in the form of an outbreak of wheat smut.

We are glad to have these gentlemen before this committee.

Which one of you gentlemen will open this testimony?

Mr. ROOT. Floyd Root.

Senator RUSSELL. All right, Mr. Root, you may proceed.

Mr. ROOT. I am Floyd Root, a wheat grower in Sherman County, Wasco, Oreg. I am farming 1,400 acres, doing my own work with the help of one hired man.

Senator RUSSELL. How many grown boys do you have, Mr. Root?

Mr. ROOT. Two sons.

Senator RUSSELL. I did not think you and one hired hand could do that.

Mr. ROOT. While the boys are in school I can do it, except in the harvest time, and they help then.

Senator RUSSELL. Mechanization has brought about a complete revolution in agriculture.

Mr. ROOT. Mechanization has; yes, sir.

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I am president this year of the Oregon Wheatgrowers League, representing all wheat growers of the State of Oregon. I am also a voting delegate to the Pacific-Northwest Farm Council, which is representative of wheat leagues, farm bureaus, granges, and farmers unions in Oregon, Washington, Idaho, and Montana.

I am also a director of the Pacific-Northwest Grain and Grain Products Association, representing wheat growers, elevator operators, independent buyers, grain cooperatives, and millers in the Pacific Northwest.

WHEAT-SMUT PROBLEMS

Our problems in Oregon are the same as wheat growers' problems in the entire Pacific Northwest, so today I can speak for all growers of wheat in the Pacific Northwest which includes Oregon, Washington, northern Idaho, and Western Montana.

Our immediate problem is control of stinking smut. Last year the wheat farmers of the Pacific Northwest lost $6½ million from smut. This loss was due to reduction of yield in the field, and the down grading of wheat because of smut present in the wheat when marketed.

The seed-treating processes are helping, but far from curing, our smut problems.

At the present time the research agencies are doing a little work on smut in methods of treating seed and plant breeding for developing resistant varieties.

However, the work is insufficient to give us the results we need. The plant-breeding program, due to a shortage of funds, is lagging in the last several years. Last year Elgin and Alicel, the varieties which are our most productive wheats, tested over 60 percent smutty when delivered to the elevators.

We have one new wheat, Elmar, which we are in hopes will cut our smut losses.

This year is only the second year for commercial production of Elmar and that variety is now beginning to show smut in some fields. We are afraid that in a few years new types of hybrid smuts will appear and cause Elmar to grade smutty the same as Alicel and Elgin are grading today.

When that happens, we are lost. In other words, when Elmar begins smutting in a few more generations, which we feel certain will happen, we have no new varieties in our nurseries to pin our hopes upon. We need money to increase our plant-breeding program to find new smut-resistant types of wheat immediately.

Work must be done now to find smut resistance in our world collection of wheats which can be transferred to types of wheat economically practical to grow in the Pacific Northwest area.

Experience in the past has shown that new hybrid types of smut are breeding from year to year faster than we can find methods of combating them.

We need more money to speed up our breeding programs to get varieties resistant to these various smut races.

We also have a new type of smut in our area. I refer to dwarf smut. To date studies on it have been very inadequate. We have one variety of wheat which has some resistance to dwarf smut, but this particular variety of wheat is not economically practical to grow in our area. Little is known of the life history of dwarf smut.

We do know it is soil-borne, and there is a possibility that infection may result from air-borne spores. To date very little research has been carried out on soil infestation of the common and dwarf smut against which chemical seed treatment is ineffective. These problems cannot be solved without money for basic research.

At the present time the research money used in the Pacific Northwest for the control of common and dwarf smut is merely scratching the surface. We need additional money to expand the smut-control project which will give wheat farmers an answer to this serious problem.

We feel that besides helping us the correction of our problems will help the Nation and the world.

In Oregon we have a wheat commission which collects one-half cent per bushel of all wheat moving into commercial channels. By state law this money is to be used for education, public relations, and market research in the States.

EXPERIMENT STATION, PENDLETON, OREG.

To implement the smut-research program in the Pacific Northwest, the Oregon Wheat Commission last year put $11,500 into this project at the United States Department of Agriculture Experiment Station at Pendleton, Oreg., and another $5,000 was used in the Pacific Northwest.

The Oregon Wheat Commission spent this money because of the urgent need to speed up the smut-research program and knowing that no additional Federal money would be available before July 1 this year.

The Oregon Wheat Commission was given the impression that the United States Department of Agriculture would include money to accelerate this important research problem in the budget for the next fiscal year, and they felt that by spending this money and getting the plant facilities completed, we could gain 1 year on the smut research problem. We believe that basic research which would provide more food and a better standard of living for all the people is a problem of all the people.

Consequently, the money to continue this research should come from Federal funds as it is so important a problem for the national welfare.

The wheat commission will continue to support the work with $5,000 for smut research and $6,000 for the necessary related wheat quality evaluation work—that is, each year—but this is all the money now available.

AMOUNT REQUESTED

To carry out this smut research program in the Pacific Northwest, we need an additional $20,000 of Federal money over and above the $17,000 which is now budgeted for this work.

We wheat people in the Pacific Northwest favor reducing Federal expenditures so that we will have a balanced budget. We feel, however, that nowhere do we get a greater return from our dollar than from our expenditures for agricultural research.

We, therefore, urge full support of the research program.

With your permission, I would like to insert in the record two resolutions of the Oregon Wheat Growers League in support of the research work of the United States Department of Agriculture.

Senator RUSSELL. Those matters will appear in the record.

(The information referred to follows:)

RESOLUTIONS OF THE OREGON WHEAT GROWERS LEAGUE RELATING TO AGRICULTURAL RESEARCH APPROVED AT ANNUAL MEETI G HELD AT PENDLETON, OREG., DECEMBER 6–8, 1951

GENERAL AGRICULTURAL RESEARCH

In analyzing the amount of money spent on research in recent years it becomes evident that under inflationary forces the expenditures have not risen proportionally to maintain an adequate program. With recent cuts in appropriations it is conceivable that research programs may have to be cut to such an extent that concrete results will be delayed indefinitely. The Oregon Wheat Growers League feels that research plays a vital part not only in discovering new facts helpful to agriculture but also is important in maintaining present systems of production.

Wheat producing areas of the United States have continually arising production problems which can only be solved by research. For example, in the Middle West green bugs and rust take their toll and in the Pacific Northwest the principal problems are soil erosion, variety improvement, marketing and smut infestations. It goes without saying other areas have problems of equal magnitude. This organization notes that appropriations for wheat research by producers and the States has risen substantially while at Federal level the reverse has been true.

Therefore, we recommend that the Oregon Wheat Growers League do all possible to see that all important agricultural research programs now in existence, as well as those projected, receive adequate congressional appropriations.

SPECIFIC WHEAT RESEARCH

We recommend that the Oregon Wheat Growers League further emphasize to the United States Department of Agriculture, Bureau of the Budget, and the Congress the need for adequate appropriations for continuity in research on improvement of wheat varieties.

Phenomenal progress has been made by the wheat section of the Western Research Regional Laboratory at Albany, Calif. in cooperation with the Western Wheat Laboratory at Pullman, Wash. and the Northern Regional Laboratory at Peoria, Ill. Studies have involved shortening the time necessary for plant breeders to produce new and better varieties of wheat.

Some of their techniques and analyses are still in the formative stages but there are exceedingly strong indications that they will be developed into methods which will enable the plant breeder to cut four-fold the time necessary to develop a new and sound variety. Obviously the development of laboratory methods to enable the plant breeder to so materially shorten the time necessary for the development of a new variety is important not only to one particular section but to the Nation as a whole from the standpoint of continued adequate production of high quality wheat. As a result of the present trend of the Congress to reduce all research expenditures indiscriminately, it is conceivable that such an important program might be seriously impaired or even stricken from existence by inadequate funds. Due to the highly technical and involved activities inherent in this work it would probably require a period of several years to again reach even the present point of achievement. For that reason it is highly important that this program be given time to perfect the techniques involved and complete its goal.

COMPARISON OF WHEAT RUST AND WHEAT SMUT RESEARCH

Senator RUSSELL. Mr. Root, last year we had considerable testimony before this committee with respect to the effect of smut on the wheat grown in Kansas and also in North Dakota. Senator Young expressed considerable interest in it.

Do you know whether or not the research which is being carried on in those fields is in any wise directly related to the problem you have in the Northwest?

Mr. ROOT. Sir, that research carried on in North Dakota and Kansas is on rust, particularly.

Senator RUSSELL. Rather than on smut?

Mr. ROOT. This is smut I am referring to.

Senator RUSSELL. You are sure there is no research on smut? I am confident we had some testimony about this.

Mr. ROOT. I think at the present time the Pacific Northwest is considered the most critical area for smut.

Senator RUSSELL. Is there not some money available for that area?

Mr. ROOT. There is. There is about $17,000 being spent now in the Pacific Northwest on all types of research on grains.

Senator CORDON. By the Federal Government?

Mr. ROOT. By the Government.

Senator CORDON. In addition to any funds that might be contributed by the league or by the State?

Mr. ROOT. Yes, sir.

Senator RUSSELL. And you are asking now for $20,000 extra?

Mr. ROOT. $20,000 additional.

Senator RUSSELL. I do not suppose you happen to know whether the bureau plans to ask for this item in the budget?

Mr. ROOT. I do not believe they did, sir. I think that it was in their proposed budget, but as the matters got down to them it was a case of robbing money from one place to put it some place else in order to increase our project in the northwest.

Senator RUSSELL. In other words, they asked for additional funds, but were not willing to take it away from other work that they were doing?

Mr. ROOT. That is correct, I believe.

Senator RUSSELL. This work will be done at the Pendleton Station?

Mr. ROOT. This will be done at the Pendleton Station, and at the Pullman Station in Washington, and there will be some dwarf smut work done in Montana and Utah.

Senator RUSSELL. And that dwarf smut is now in Oregon?

Mr. ROOT. Yes; it is; it is beginning to come into Oregon now. It is serious in the Pacific Northwest.

Senator RUSSELL. Do you think it would obviate this smut problem by chemical treatment of the seed and to develop a new strain of wheat?

Mr. ROOT. The chemical treatment at the present time has no effect upon dwarf smut. It will not control dwarf smut. Another method of carrying smut I referred to is soil infestation. Chemical treatment has no effect upon soil infestation. It will correct the spot that is on the kernels when the wheat is seeded, but that is about all the chemical treatment will do.

Senator RUSSELL. Senator Cordon?

Senator CORDON. I did not know about this situation in time to ask of the representative of the Department information concerning it. I had hoped that we might request of them that they read this statement submitted by Mr. Root and Mr. McKinnis and that they then furnish a statement that might go into the record covering the subject. That would save the time of bringing the matter up, and I think it would put us in possession of what information we need.

Senator RUSSELL. Mr. Cooper, will you see that that is done, please?

Mr. COOPER. Yes.

(The information requested follows:)

WHEAT SMUT RESEARCH IN THE PACIFIC NORTHWEST—BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING

Smut has been a serious threat to the wheat industry of the Pacific Northwest since the first decade of the century. In the 1920's and 1930's as much as 50 percent of the wheat reaching terminal markets was down-graded on account of smut. Resistant varieties were developed and the loss was reduced to less than 3 percent by 1942. New races of smut, however, have now arisen which attack the wheat varieties being grown and they are no longer satisfactory. In 1950, the loss from smut in the five Pacific Northwest States, Washington, Oregon, Idaho, Montana, and Utah, had increased to an estimated $9 million. The loss in 1951 is estimated at $6½ million, the reduction being due to a greater portion of the acreage being in spring wheat. While new wheat varieties with some smut resistance have been developed, none of the varieties are completely resistant to all races.

There are two methods of controlling smut: (1) Seed treatment—for common smut, and (2) growing resistant varieties—for either common smut or dwarf smut. Seed treatment has been only partially successful because infection to a considerable extent takes place in the soil. Although many new chemical compounds have been tested, none have been found to produce satisfactory control when infection is carried in the soil.

The most promising way to reduce losses from smut is by breeding resistant varieties. With the development of new races of smut, it is necessary continuously to breed new resistant wheat varieties. As the number of new races of smut increases, the work of the plant breeder in developing new wheats resistant to all of these races becomes more complex.

Since the Bureau must give attention to meeting other new and important cereal problems, such as race 15B of stem rust, wheat mosaic, and wheat stem sawfly, it is not practical to expand the current research program on wheat smut by the transfer of funds from other activities of the Bureau.

HISTORY OF WHEAT SMUT

Senator RUSSELL. All right, Mr. McKinnis, do you care to say anything supplementary to this statement?

Mr. MCKINNIS. I have no brief filed, but I was just sitting here with him. I wonder if you gentlemen would like for me to take 5 minutes and come up with a history of smut and what it means to the industry?

Senator RUSSELL. I think it would be informative to the committee.

Mr. MCKINNIS. We have had smut in our soft wheats for a period of long years.

Senator CORDON. You do not mind being interrupted, do you?

Mr. MCKINNIS. No.

Senator CORDON. Is this particular disease more prevalent in the soft wheat than in hard wheat?

Mr. MCKINNIS. That is right; in the soft varieties of wheat. I understand there is also smut in Maryland and in the Ohio Valley as well as in the Soft-Wheat Belt in the west coast.

Senator CORDON. All right.

Mr. MCKINNIS. We had one variety that we used on the Pacific Coast at one time called Rex. Our smut losses went way down. We had a white wheat that was no good for milling and it was not very good for feed.

So, in order to stay in business and market our crop we had to get back into a suitable milling quality of soft wheat. Since we have made the switch our smut losses are increasing year by year.

In the year of 1949 from the station at Pullman we came out with a new variety, the Elgin variety. It is resistant to our known varie-

ties of smut, of which there are 33 varieties, and one variety of dwarf or second smut that we have at the present time.

We know that it will be impossible to stop hybridization of dwarf smut or bald smut or stinking smut. Once that happens we have no variety of any type to drop back on.

In the bald type smut our wheat grows up to an average height but the head is black and the kernels are full of black or powdery stuff. Too much of it is very explosive.

When you harvest it it mashes up in your combine and it requires washing. With just a small percentage of smut, if you get too much or too high a moisture content you have very poor feeding.

The dwarf smut, in turn, strikes the wheat at the time it grows into a head. Instead of the head forming into a regular kernel, the wheat gets about half the height of the regular height and it is all solid smut.

You will see a stand of wheat that looks beautiful, but when it is headed up you have only scattered heads in the field.

This year in our county we paid on, I think, three or four programs, and paid them for nothing but second smut. We have no new variety in sight in the way of something that is resistant to this one type of dwarf smut, and we know it can hybridize like the others.

We started out with one type and today we have 33 different hybrids.

One thing we want to do is to attack the spores in the soil and try to kill them in the soil and instead of trying to breed a plant.

Senator CORDON. You have me confused. If you had only one type of smut in the first place, what did it hybridize with?

TYPES OF SMUT

Mr. MCKINNIS. I believe they had three types of smut. I have lived on a wheat ranch all of my life and we raised 120 acres of hybrid of a beautiful type and it would sometimes run up to about 15 percent smut. We went into different planning.

It is really a very serious thing in soft white wheat, and a common thing in the entire soft white wheat industry?

Senator CORDON. Through the years in that area we have had some smut here and there at all times.

Mr. MCKINNIS. Every year it happens. I do not think there has been a year where certain weather factors and conditions have not made maybe one section of the country bad and another section fairly clean. Next year it may be in reverse. There is no set pattern.

Senator CORDON. Your worst trouble, I take it, at the minute, is the fact that the dwarf smut is moving in from the areas where it has been worst, the Montana areas, and Utah. It is moving west.

And while you might be able to hold that particular strain of dwarf smut down, the minute that it hybridizes, then you have a brand new problem and nothing to answer it with.

Mr. MCKINNIS. There is no new variety known at all. At the College of Washington State in breeding for smut resistance, they have reached the end of their line. At the present time, at the station, I believe they have 3,500 varieties planted in rows and are working and trying to find one that will be resistant to the other types of hybirds of dwarf smut.

Senator HAYDEN. How long does the smut spore stay in the ground? Then, if you quit planting wheat and planted some other crop for a year or two, would the smut still be there?

Mr. MCKINNIS. They do not know how long the dwarf smut can be there. It is wind-borne, too, by the way.

Senator HAYDEN. We have a soft white wheat we called Sonora wheat, and that wheat was subject to smut. By planting the land in alfalfa for a year or two they came back with it and they were not bothered. I do not know whether that might be true up there.

Of course, yours is just wheatland, and that is all.

Mr. MCKINNIS. I know in the eastern part of the State where there is diversified farming, there is a possibility of that. However, speaking from my personal experience, I had some land in alfalfa, and I put it in soft feeders and it went smutty on me.

There does not seem to be a set rule or a pattern for method of treatment that can control it.

We feel that in the long run the answer is going to be in finding something that we can use in the soil to kill that smut spore in the soil instead of trying to keep ahead of the thing. In other words, an eradication program instead of trying to live with it. We have got to get rid of it.

Senator HAYDEN. I might add that soft wheat makes much better unleavened bread and kneads with the hand much better than hard wheat.

Senator ELLENDER. It must make good biscuits.

Mr. MCKINNIS. I have a short resolution, a copy of which I will leave with the committee, that was passed at the annual meeting of the Pacific Northwest Council last year and reaffirmed this year. The membership of this council comprises the granges, farm bureaus, farmers unions, wheat leagues of the States of Montana, Idaho, Washington, and Oregon.

In other words, it is a group that gets together to formulate a program. Every year we have an annual meeting in Spokane and we have an entire day of talking usually on smut-research problems as related to agriculture.

That is one of the most important phases at the present time and it covers two points, one is research, and the second is public relations.

We always have a keen interest, and we are very interested and always trying to find some of the answers. It reads:

"Be it resolved:

"The Northwest Farm Council recognizes that the field of agricultural research has not been receiving its fair and necessary share of agricultural appropriations from both State and Federal sources, and since a productive and prosperous agricultural program is the lifeblood of, and necessary to, a successful nation, we urge that adequate funds be made available to responsible State and Federal departments to carry out the functions of research in the production, utilization, and marketing of agricultural products.

"Parent organizations are urged to take immediate action and so notify the proper authorities."

Senator RUSSELL. You have stated fully for the record what organization passed that resolution?

Mr. MCKINNIS. Yes, sir.

That concludes my statement, gentlemen. I want to thank you gentlemen, and thank Senator Cordon for making my appearance possible to appear before this committee.

Senator RUSSELL. We are glad to have had you gentlemen here, and we will investigate this matter further when we get the report from the Department.

Thank you very much.

Mr. ROOT. Thank you.

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

INSECT AND PLANT DISEASE CONTROL PROGRAMS

STATEMENTS OF A. S. HOYT, CHIEF, BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE; DR. C. H. HOFFMANN, ACTING ASSISTANT CHIEF; DR. W. L. POPHAM AND R. A. SHEALS, ASSISTANT CHIEFS, BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE; HENRY G. HERRELL, DEPUTY ASSISTANT CHIEF, BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE; MRS. M. W. SYFRIG, BUDGET OFFICER, BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE; AND RALPH S. ROBERTS, DIRECTOR OF FINANCE AND BUDGET OFFICER, DEPARTMENT OF AGRICULTURE

BUDGET SCHEDULE

(Schedules from the justifications follow:)

Salaries and expenses

	Insect investigations	Insect and plant-disease control	Plant quarantines	Total
Appropriation Act, 1952	$3,650,000	$4,600,000	$2,600,000	$10,850,000
Anticipated pay adjustment supplemental	+265,500	+297,900	+192,600	+756,000
Activities transferred in 1952 estimates from "Control of emergency outbreaks of insects and plant diseases"		+842,000		+842,000
Base for 1953	3,915,500	5,739,900	2,792,600	12,448,000
Budget estimate, 1953	3,869,000	5,672,000	2,759,000	12,300,000
Decrease (due to partial absorption of pay adjustment costs)	−46,500	−67,900	−33,600	−148,000

Project statement

Project	1951	1952 (estimated)	Decrease (pay adjustment absorption)	1953 (estimated)
1. Insect investigations:				
(a) Insects affecting food, feed, and fiber crops	$2,870,193	$2,730,300	−$32,500	$2,697,800
(1) Fruit insects, including fruitflies	(1,046,607)	(887,000)	(−10,600)	(876,400)
(2) Truck crop and garden insects	(488,243)	(467,800)	(−5,500)	(462,300)
(3) Cereal and forage insects	(535,804)	(596,700)	(−7,100)	(589,600)
(4) Cotton insects	(259,741)	(250,300)	(−3,000)	(247,300)
(5) Bee culture and biological control	(272,816)	(279,700)	(−3,300)	(276,400)
(6) Stored products insects	(266,982)	(248,800)	(−3,000)	(245,800)
(b) Insects affecting forests and forest products	494,791	485,800	−5,800	480,000
(c) Insects affecting man and animals	221,668	249,500	−2,900	246,600
(d) Plant pest control investigations	421,600	449,900	−5,300	444,600
(1) Classification and occurrence of insects	(180,687)	(196,500)	(−2,300)	(194,200)
(2) Insecticide and fungicide	(240,913)	(253,400)	(−3,000)	(250,400)
Subtotal	4,008,252	3,915,500	−46,500	3,869,000
2 Insect and plant disease control:				
(a) Japanese beetle control	499,348	503,700	−6,000	497,700
(b) Sweetpotato weevil control	225,337	242,300	−2,600	239,700
(c) Mexican fruitfly control	168,249	175,100	−2,100	173,000
(d) Phoney peach and peach mosaic eradication	154,118	163,700	−1,900	161,800
(e) Barberry eradication	679,346	712,600	−8,500	704,100
(f) Pink bollworm and Thurberia weevil control	1,175,806	1,255,200	−14,900	1,240,300
(g) Golden nematode control	373,618	394,000	−4,700	389,300
(h) Citrus blackfly control	89,549	95,300	−1,100	94,200
(i) White fringed beetle control	713,222	714,500	−8,500	706,000
(j) Hall scale eradication	104,424	86,700	−1,000	85,700
(k) Gypsy and brown-tail moth control	557,821	554,800	−6,600	548,200
(l) Grasshopper and Mormon cricket control	812,795	578,800	−6,900	571,900
(m) Special surveys	200,636	263,200	−3,100	260,100
Subtotal	5,754,269	5,739,900	−67,900	5,672,000
3. Plant quarantines	2,372,181	2,792,600	−33,600	2,759,000
Unobligated balance	210,850			
Total pay adjustment costs	[----------]	[870,000]	[+11,000]	[881,000]
Total available or estimate	12,345,552	12,448,000	−148,000	12,300,000
Transferred in 1952 estimates to: "Salaries and expenses Office of Information, Agriculture"	+700			
Transferred in 1952 estimates from: "Control of forest pests, Agriculture" gypsy and brown-tail moths	−557,821			
"Control of emergency outbreaks of insects and plant diseases, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration"	−1,013,431	−842,000		
Reduction pursuant to sec. 1214	+187,200			
Anticipated pay adjustment supplemental		−756,000		
Total appropriation or estimate	10,962,200	10,850,000		

Control of emergency outbreaks of insects and plant diseases

Appropriation act, 1952	$1,800,000
Anticipated pay adjustment supplemental	42,000
Activities transferred in the Budget estimates to "Salaries and expenses, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration"	−842,000
Base for 1953	1,000,000
Budget estimate, 1953	1,000,000
Change	

Project statement (reflecting available funds)

Project	1951	1952 (estimated)	1953 (estimated)
1. Contingency fund	$151,455	$1,000,000	$1,000,000
Unobligated balance	1,380,874		
Total available	1,532,329	1,000,000	1,000,000
Transfer in 1953 estimates to "Salaries and expenses, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration"	+1,013,431	+842,000	
Prior year balance available in 1951	−445,760		
Anticipated pay adjustment supplemental		−42,000	
Total appropriation or estimate	2,100,000	1,800,000	

REPORT OF STUDY GROUP ON CONTROL PROGRAMS

Senator RUSSELL. Next we have the group of witnesses representing the Bureau of Entomology and Plant Quarantine, the main witness being Mr. Hoyt, with his assistants.

Mr. HOYT. We have passed around for the membership of the committee, Mr. Chairman, a report on the insect and plant disease control programs of the Bureau of Entomology and Plant Quarantine. It represents a study of the work of the Bureau which was made on the recommendation of the House Appropriations Committee. That committee requested a year ago that the Secretary make such a study and listed four points to be given attention: (1) Need for continuing the program, (2) revision of methods of control, (3) efforts being made to increase non-Federal cooperation, and (4) whether or not the program should be made contingent upon adequate State laws and enforcement of them.

The Secretary asked six men to make this study for him. He named on that group Mr. W. A. Minor, who is in his office. In addition, he named the president of the University of Wyoming, Dr. G. D. Humphrey; a man representing farm organizations, Mr. Fred V. Heinkel, of Missouri; a representative of the State agricultural commissioners, secretaries, and directors of agriculture, Roy E. Young, of Illinois; a representative of the legislative branch of the Government, a man from the Congressional Library, G. Harris Collingwood; and a representative of the insecticide industry, Mr. L. S. Hitchner, who serves as executive secretary of the National Agricultural Chemicals Association.

You will find their names included in this booklet, and I think it will afford a very interesting report of the study which this group made.

They started out by inviting the governors of each State and the director of agriculture of each State, and other cooperators to participate in a series of hearings and to arrange to have such representatives as they deemed appropriate for their States at these hearings.

They held meetings in Minneapolis, Boston, Houston, Gulfport, Denver, and San Francisco. Over 200 witnesses appeared and commented on all or some of the bureau control programs. They have brought that information together in this report together with the recommendations of the group.

I think you will find it interesting, particularly the recommendations for dealing with some of these control programs.

Senator HAYDEN (presiding). What is the general nature of the recommendations?

Mr. HOYT. In no case have they recommended discontinuation of these control programs. They have in some cases recommended that we should try to get more State, local or private participation to relieve the Federal Treasury; correspondingly, and in some cases they have recommended that we at least as an alternative go more directly at the problem, even if it involves spending more money than at present.

CONTROL OF GYPSY MOTH

For instance, one activity of which you have heard a great many times, is the control of the gypsy moth. They have pointed out that we should do one of two things, either get more cooperation and settle down to the idea of continuing that program, on and on and on, as long as the gypsy moth is restrained in a limited area of the country, or that we should undertake in cooperation with the States involved an outright eradication program based upon about 5 years of very intensive suppressive work.

Senator HAYDEN. I understand, of course, that different pests require different programs.

Mr. HOYT. Yes, sir.

REORGANIZATION OF WORK ON STORED-PRODUCTS INSECTS

We have been carrying on some reorganization of the various activities in the Bureau. We have brought together in a single division all of the research that has to do with insects attacking stored agricultural products.

That refers to cereals, dried fruits, dried beans and peas, nuts, and other products. That work had been scattered throughout the Bureau. It has now been assembled in one agency which we call the Division of Stored-Products Insects. It does not represent an additional division; it represents a combination of activities in a division which was formerly part of the Bureau organization. It is giving particular attention to meeting the needs of the industries which are handling, processing, and storing food products.

We had a conference here in Washington not long ago in which the representatives from a large number of food-processing plants gathered to organize and provide advisory services to the Bureau in planning its operation and to furnish facilities for experimental work.

We did not have adequate space and adequate quantities of material in which to extend the operations, which have been worked out on a laboratory scale.

Senator HAYDEN. Do you find industry willing to provide that space?

Mr. HOYT. They will give us any amount of material to work on that we want, Senator Hayden. There is no limit to warehouse-stored products that are available as soon as we have something we want to try out.

Senator HAYDEN. The only thing they lack is the know-how of getting the bug to put him out of business?

Mr. HOYT. Yes, sir. If we come along with a real promising remedy, they are willing to help us out. We feel we have a very fine response to that step in the organization.

Now, the losses that are caused by insects are still very serious in this country. It is variously estimated at some 5 to 10 percent in the small grains.

Senator HAYDEN. That is principally from the weevil?

Mr. HOYT. Yes, sir. And if the present plans of the Food and Drug Administration are carried out, there will probably be more restrictions on material to be used for human consumption and will mean even additional amounts of these grains will have to be diverted to feed purposes. This intensifies the industry interest in the development of more effective methods of preventing and destroying infestation in the stored grains.

REORGANIZATION OF BEE CULTURE AND BIOLOGICAL CONTROL RESEARCH

We are now in the process of combining activities formerly conducted in the Division of Foreign Parasite Introduction and in the Division of Bee Culture. The new division is called the Division of Bee Culture and Biological Control.

The biological control research, it seems to us, combines very logically with bee culture work since both are based on man's use of beneficial insects.

Senator HAYDEN. I did not know there was any beneficial insect except the bee.

Mr. HOYT. The biological control and the introduction of insects in biological control goes back a good many years, Senator Hayden, and I expect you will recall with a little thought some of the instances where insects other than the bee have been very helpful.

One of the first that happened in this country was the introduction of the parasite or the predator on the white scale, which was devastating the citrus groves in this country.

Senator HAYDEN. What I meant was we take the bee and put him to work directly for us. Now, of course, to import a disease and then bring in a parasite is another problem.

Mr. HOYT. Yes, sir. The white scale of citrus has never required the expenditure of any money for insecticides in its control. A few years ago we introduced insects which were found to be exclusive feeders on the weed which is serious in some of the western areas, called Saint John's weed known out there as the Klamath weed. I imagine you know something about that, Senator Cordon.

KLAMATH WEED AND CANE BORER RESEARCH

Insects in some areas have been very effective and the Klamath weed has been destroyed in very large proportion, so that we feel that over large parts of that area the biological control is going to give satisfactory results.

Senator HAYDEN. The insect will work himself out of a job and kill all of the Klamath weed.

Mr. HOYT. It seldom happens, Senator, that an insect will work himself out of a job. This white scale case is the nearest to that we

have on record. They actually do. We have had to keep cultures of those predators alive in order to deal with our local infestations of white scale.

Senator ELLENDER. You did some work on the cane borer, too, did you not?

Mr. HOYT. That is right. There have been insect introductions for that also.

Senator CORDON. Is the Klamath weed spread pretty generally in the West, in Oregon, do you know?

Mr. HOYT. Yes, sir.

Senator CORDON. Is that one of the weeds that we tried to eradicate in order to save grazing areas?

Mr. HOYT. That is right. They found that that weed not only occupied the pasture space but that it had some injurious effects on the livestock.

Senator CORDON. There is another name which I know, but I cannot recall it.

Senator ELLENDER. We have a weed down my way that is commonly called Allegheny grass that grows in wet soil.

Mr. HOYT. Yes, sir.

Senator ELLENDER. It infests shallow streams on the banks of which there may be farms, and sooner or later these weeds play havoc with the crops of corn and potatoes.

Mr. HOYT. It is very difficult to control that Allegheny grass with any present method or equipment, and we have never made a search for an insect enemy of that.

Senator ELLENDER. That stuff grows overnight.

Mr. HOYT. I know the plant. One difficulty we run into on that kind of thing is that a very exhaustive study has to be made before an insect enemy of a weed can be introduced to be sure that he is a specific feeder, you see. If he should leave the Allegheny grass to eat the cotton and the cane, there would be a serious problem. So that has to be determined absolutely before any of these introductions are made.

Senator ELLENDER. Is your work confined merely to obtaining insects that destroy a certain weed or shrub, or do you experiment with other methods of eradication?

INSECTICIDAL, CULTURAL METHODS EMPLOYED

Mr. HOYT. Oh, yes. We are carrying on experimental work all the time to try to destroy them with the use of insecticides, cultural, and other methods of control.

Senator ELLENDER. Did you ever try experiments on this Allegheny grass?

Mr. HOYT. The application of herbicides for the control of vegetation is a problem which is being carried on in the Bureau of Plant Industry, Soils, and Agricultural Engineering, so we have no chemical methods.

Senator ELLENDER. That is why I asked you the question a while ago as to whether you confined your work to insects only.

Mr. HOYT. For weed control our efforts are limited to insects. Other weed control efforts are the responsibility of the other bureau.

Senator ELLENDER. I see.

BEET LEAF HOPPER RESEARCH

Mr. HOYT. We are now engaged in sending a man to the Mediterranean region in cooperation with the State of California in a search for parasites of the beet leaf hopper. The beet leaf hopper is the vector of a very serious disease known as curley top which attacks sugar beets and a number of other crops in the Western States. The beet leaf hopper spends a part of the year in the wild growth and moves into the crops when they come into full growth in the spring and inoculates them with this disease.

The State of California is cooperating with us in sending this man to look for parasites of the beet leaf hopper, and while he is in that area he will also make such observations as he can for insects that attack the weed of which we have heard a great deal in recent years, halogeton, which occurs in some of the Western States.

Senator HAYDEN. Is that weed a native of Europe?

Mr. HOYT. Of Europe or of Asia, I am not real sure. It has been attributed to both.

Certainly, it is pretty well established. I think, that it comes from one of the countries that are now behind the iron curtain.

PINK BOLLWORM SITUATION

I should like to report on the pink bollworm situation. The pink bollworm of cotton has been spreading for three successive years. It has moved into additional territory. The methods which have been employed to prevent the spread and to control the pink bollworm have not been as satisfactory as desirable. At the present time the pink bollworm has spread across the State of Texas from south to north. The southern counties of Oklahoma are infested, the insect is very close to Arkansas, and has actually moved into the State of Louisiana. They had a noncotton zone in parts of two or three parishes in Louisiana last year, and it looks as though it will be necessary to have the noncotton zone in parts of that State again this year.

Senator HAYDEN. We have had infestation on two or three occasions at home, and that was the only way to get rid of it, to eradicate the cotton in that area for a period of time, and then the pink bollworm was gone.

Mr. HOYT. You had a very serious infestation there, the first one, Senator, being some 40,000 acres which were involved.

Senator HAYDEN. That is correct.

Mr. HOYT. The area is so large where the insect enters this country by natural flight from Mexico that it has been impossible to have a noncotton zone in that area, and we have been trying to control the insect by cultural methods. The State actually licenses the farmers to grow cotton in south Texas. When the farmer gets his license to grow a cotton crop, he enters into an agreement, to plant by a certain date and to harvest and destroy the residues of his crop by certain dates. The object is to have as long a term as possible when there will be no cotton for the insects to feed upon.

Weather enters into that kind of a program very materially. Two years ago we had heavy rains just at the time when the farmer was supposed to clean up his cotton crop residue. They were unable to

get on the land, and this prolonged the season. Last year, as you know, they had an exceedingly dry year in south Texas along with other parts of the country, and the farmers were unable to plant their cotton by the date set. It was necessary to extend the planting season, which meant a corresponding extension of the harvesting season. This permitted another generation of the pink bollworms; and it is that last generation each year that produces the astronomical numbers.

It looks as though we are in for a similar situation this year, because it is exceedingly dry there now and the planting is delayed over large acreages. The deadline for planting cotton, the normal deadline, expires at midnight tonight, (March 31) and there seems to be no prospect but that the Commissioner of Agriculture will have to extend the season again this year.

Senator HAYDEN. There are no other crops being planted there at this time?

Mr. HOYT. They could not shift to other crops unless they completely changed their economy. It possibly could be done if they had time. Time enters into these things. They are all ready to plant cotton and every preparation has been made. I doubt if it could be done at this late date.

Senator ELLENDER. What is your present method of control?

Mr. HOYT. They grow a fast term variety. The best method being used in Louisiana is to grow no cotton in infested areas. You just have a noncotton zone. If there is no cotton that kills the insect out in one season.

METHOD OF PINK BOLLWORM SPREAD

Senator CORDON. How does the insect spread?

Mr. HOYT. In larval or immature stages it may be moved in cottonseed or cotton debris. In the adult stage, as a moth it is a strong flier, and is also carried on the wind. The spread is usually in the direction of the prevailing wind currents. It has been carried into Arizona, and I do not think there is any doubt but that it is carried in by the wind.

Senator ELLENDER. It is the bug itself that is carried?

Mr. HOYT. Yes, sir. The moth lays eggs in the cotton, and the worms start to feed in the bolls. They are actually pink in color. That is where it gets its name pink boll worm.

Mr. HERRELL. Here is a picture of the insect in its several stages of development.

Senator ELLENDER. I was looking at that.

What effect do you think it will have on the cotton production this year from what you know of the spread of it?

Mr. HOYT. I do not know why it would have any more or less effect than it did last year, Senator. The situation at this time looks to be about the same.

Senator ELLENDER. Is there more infestation now than there was last year?

Mr. HOYT. Yes; there are 17 counties that have to be added to the infested area this year, mostly in the State of Texas. That involves some additional cotton.

Senator ELLENDER. Have you any new areas wherein the worm has become present where it never appeared before?

Mr. HOYT. Seventeen new counties in 1951.

Senator ELLENDER. In Texas?

Mr. HOYT. Yes, sir, in Texas. We hope there will be no further spread.

Senator ELLENDER. It has spread to a good deal of area in southwest Louisiana, as I recall.

ORIGIN OF PINK BOLL WORM

Senator HAYDEN. How did that pink boll worm get to this continent? Was it originally from Egypt?

Mr. HOYT. It was, yes, sir; and it was brought with some cotton planting seed about 1911 to Mexico. The United States Department of Agriculture found that they were suffering losses from pink boll worm in Mexico, but the worm did not appear in this country until they began to send cotton seed into the United States for milling purposes. The first infestations of pink boll worm in this country were found in a field in the vicinity of one of these oil mills at Hearne, Tex., about 1917.

We had noncotton zones following that time, but the Texas growers rose up and refused to go along with noncotton zones before it was possible to complete the eradication. Of course, eradication is out of the question unless we find some more effective measure.

POSSIBLE USE OF PARASITES ON PINK BOLLWORM

Senator HAYDEN. Is there any parasite that will keep it down?

Mr. HOYT. Yes. There is more effective natural control of the pink bollworm in the other countries than we have here. We have made a very vigorous search for parasites on the pink bollworm, and we have four that are somewhat effective. But they have not been enough effective to actually reduce the danger of the spreading of pink bollworm.

Senator HAYDEN. As to the amount of cotton grown in Egypt or Sudan, does the pink bollworm cause serious losses there every year?

Mr. HOYT. Yes, sir; they have serious losses there. It is a serious pest on the cotton. The control the world over is based on the same thing, which is prompt destruction of the stalks immediately after harvest. That is, prompt destruction by plowing under or by burning of the stalks.

Senator ELLENDER. Doctor, have you had recurrences of the pink bollworm where there has not been any cotton planted for 3 years, let us say?

Mr. HOYT. There has been only one case where a noncotton zone has been carried on in the second year, and that is in your State, Senator. In Cameron Parish where the noncotton zone was, a reinfestation occurred in the second year when we went back to growing cotton. We believe that the difficulty there is due to the fact that there was an infestation which was not discovered the first season. That is the only way we can account for it.

Before I leave the subject of pink bollworm, I would like to say we have sent a man to search for parasites, again in the hope that we may find a more effective natural control of the pink bollworm, and we are putting some additional funds into pink bollworm research

by modifying other research programs to see if it is possible to find a more effective means of control, particularly through the use of insecticides.

We have in mind also the possibility that a good herbicide might be used at the conclusion of the harvest season to destroy the cotton from the air by a spray that would kill the cotton plants and deprive the pink boll worm of a host, so that we would get, in spite of the weather, the effect that we have been trying to get by ground operations when we could destroy the cotton stalks.

PROGRESS ON GRASSHOPPER CONTROL

Now, a word on the grasshopper control situation. You have heard a great deal about grasshoppers and crickets. The grasshopper-control program underwent a very profound change with the development of some of these newer insecticides. Where we used to have to put out several pounds of material mixed with bran as a bait, it is now possible from an airplane to distribute as little as 2 ounces of insecticide carried in about a gallon of oil, per acre. This application actually destroys the grasshoppers that may be on that acre of ground.

Senator ELLENDER. How does it destroy them, by contact?

Mr. HOYT. Yes.

Senator ELLENDER. They are merely saturated with oil?

Mr. HOYT. It leaves a residue on the crop so that they get it by means of the stomach if they do not get it from contact.

Senator ELLENDER. You mean by eating the grass.

Mr. HOYT. Yes, sir; by eating the sprayed grass.

Senator CORDON. What do you use for poison?

Mr. HOYT. That is aldrin.

Senator CORDON. What is it?

Mr. HOYT. That is the trade name for the chemical. I will have to furnish for the record the technical chemical name if you would like it.

Senator CORDON. Will you put it in, please?

Mr. HOYT. I will be glad to do so.

(The information referred to follows:)

The technical name of Aldrin is 1, 2, 3, 4, 10, 10–hexachloro–1, 4, 4a, 5, 8, 8a–hexahydro–1, 4, 5, 8–dimethanonaphthalene.

Senator HAYDEN. The principal complaint we have had about areas in the United States where grasshoppers were breeding a great deal cover Wyoming, Montana, and the Dakotas. Has that whole area been sprayed?

AREAS SPRAYED FOR GRASSHOPPER CONTROL

Mr. HOYT. A very large part of it has. There have been about 12 million acres sprayed in the last 2 or 3 years, mostly with this new material, and it is an effective grasshopper control. They do not come back the next year. I am not saying they are not coming back, but there is a complete destruction at the time of application; it destroys the present grasshopper population.

Senator HAYDEN. I noticed an item in the newspaper that something was being done on the point 4 program to try to get the source of the vast amount of locusts that fly in the Asian countries. What is being done about that? Are you familiar with that program?

POINT 4 LOCUST CONTROL PROGRAM

Mr. HOYT. Yes, sir. When the point 4 program was set up we were asked to furnish a man to take charge of it. He went to Iran, Pakistan, and two or three other countries in that general area and actually demonstrated with airplanes and this material methods of locust control. It was very effective. The peasant women would go out as the sprayer would go over, and stand there with their aprons extended and get them just covered with grasshoppers and locusts in a very short time.

Senator HAYDEN. Does it destroy the edible quality of the locusts? They are consumed as food by human beings in that area, I believe.

Mr. HOYT. Do you know if we have any answer to that, Dr. Popham?

Dr. POPHAM. I doubt if they would eat those that had been so poisoned.

Senator CORDON. Do they still eat them?

Mr. HOYT. I believe that they have done it in some countries.

Senator CORDON. In what countries?

Mr. HOYT. I will have to put that in the record, Senator.

(The information requested follows:)

It is understood that locusts are used to some extent as human food in southern Luzon, lower Mexico, and in central Africa. It is doubted that they are used to any appreciable extent in any of these areas.

Senator CORDON. Does it represent any appreciable part of their diet or is it some type of delicacy?

Mr. HOYT. I do not think it represents any appreciable part of their diet.

Senator ELLENDER. With our meat shortage, Senator, it might be a good idea to look at that.

Senator CORDON. That is when I become a vegetarian.

Senator HAYDEN. I do remember Senator Lodge, who served in north Africa, stating something about the clouds of locusts that came over that half darkened the sun. He said that in some areas they were in enormous numbers. He himself saw them. Where they come from, I do not know.

Senator CORDON. How do the people catch them for meat?

Mr. HOYT. When they come in such clouds as they do, I do not believe there is any problem in catching them, Senator.

Senator CORDON. They got into northeastern Oregon a few years ago, and there was not any problem in catching them. All you had to do was get out there and shovel them up.

Mr. HOYT. Yes, sir; when they come in those big droves there is no trouble.

GRASSHOPPER CONTROL NOW LARGELY ON PREVENTIVE BASIS

The success of the grasshopper control since the new methods have become available, is leading us into a preventive program. We have gone on the principle that with this effective control available the crop farmers should be able to take care of their own land. And we have been cooperating with the States and with the owners in the control of the hoppers on the ranges. With the effective use of

this material it has definitely been possible to control the large migrations of grasshoppers which have been so serious in the past.

Senator CORDON. Does this grasshopper poison represent any kind of a threat to humans who might eat the crops that have been sprayed by it?

Mr. HOYT. There are only 2 ounces sprayed to an acre of land to begin with. They have sprayed pastures in which livestock were grazing without any reported injury at all, so that I think there is no evidence whatsoever of any hazard connected with the use of this.

Senator CORDON. Nor does it make the crop distasteful to the animal?

Mr HOYT. No; there is nothing perceptive on that. I attribute that to the very small amount that is necessary.

Senator CORDON. Did the Department of Agriculture put together this poison aldrin with the long name, or did that come from industry?

CHEMICAL INDUSTRY'S PARTICIPATION IN DEVELOPMENT OF ALDRIN

Mr. HOYT. That came from industry. This was a product which was developed by industry, and which was brought to the Department for testing, and it has been used with great effectiveness in a number of ways.

Senator CORDON. The Department did, however, participate in the studies which resulted in the utilization of this product?

Mr. HOYT. Yes, sir; and was very quick to see the advantage of the material on certain uses, particularly that of the grasshopper.

Senator CORDON. And it also is the moving agent in getting the information out to the people who are interested and who can use it?

Mr. HOYT. Yes, sir; as to recommendations for the uses of the material.

Senator CORDON. That is a pretty good partnership.

Mr. HOYT. Yes, sir; a very effective partnership.

Senator ELLENDER. As a rule, is it not true that grasshoppers propagate in a certain area?

Mr. HOYT. Yes, Senator, they do.

Senator ELLENDER. They do not usually reproduce or multiply in the fields they attack, is that right?

Mr. HOYT. It depends on the vegetation.

AREAS OF GRASSHOPPER PROPAGATION

Senator ELLENDER. I got the impression at the last year's hearings or maybe the year before that you had particular spots in some States where they multiplied very heavily.

Mr. HOYT. That is true.

Senator ELLENDER. And I am wondering if those spots are known and whether or not any effort is being made to destroy them where they propagate.

Mr. HOYT. In a number of those areas in which they deposit their eggs, that refers primarily to these migratory hoppers; the ones that move in large bands.

Senator ELLENDER. Those are the most destructive.

Mr. HOYT. They are.

Senator ELLENDER. Because of the vast quantities in which they are produced.

Mr. HOYT. As to some of the big beds, the locations are known, but we have never been near enough up with our problem so that we could take the entire preventive measures and treat those areas. We are fast approaching that point. We now have control of the grasshoppers on a basis where we believe destructive outbreaks can very largely be prevented, and the next thing will be to knock down the population at their point of origin.

Senator ELLENDER. Did you study the problem far enough to note that they come back to a particular area in which to multiply?

Mr. HOYT. Yes, sir.

Senator ELLENDER. Somewhat similar to the salmon in the Northwest.

Mr. HOYT. Those egg beds, whether it is a conscious return or not, I do not know, but they are the scene of something that brings them back there to lay their eggs for the next year's generation.

GYPSY MOTH PROGRAM

We mentioned the gypsy moth a moment ago, in connection with the report of the Secretary's study group. That group recommended, as one of the means of dealing with the gypsy moth, an eradication program. It would have been completely impractical a few years ago, but now we have, through the use of the DDT, used at the rate of a pound to an acre, a very effective and economical method of destroying the gypsy moth. It can be applied from the air at a total cost of approximately $1 an acre, which makes it practicable to actually give thought to the idea of ridding this country of the gypsy moth.

Senator HAYDEN. That moth is not likely to do what the common housefly has done, to become tolerant to DDT, is it?

Mr. HOYT. I am glad you asked that question, Senator. The common housefly has a number of broods per year, say, about 15, from the general vicinity of Washington southward, whereas the gypsy moth has but one generation a year. So that we can expect that it will take a good many years before the gypsy moth would develop any immunity to this treatment.

Senator CORDON. What particular type of tree is the gypsy moth dangerous to? What does he live on?

Mr. HOYT. It attacks mostly the hardwood in the forests.

Senator CORDON. All of the hardwoods?

Mr. HOYT. I believe so. I would not say all, but most of them.

Senator CORDON. Does it attack oak?

Mr. HOYT. Yes, sir; it is very partial to oak.

Senator ELLENDER. They attack pecan trees. We have a kind of a moth that looks like the insect in this picture. It forms a kind of web, propagates and just simply cleans out a pecan tree in no time.

Mr. HOYT. That is right, but that is a different moth.

Senator ELLENDER. That is not a gypsy moth?

Mr. HOYT. No, sir, that is not a gypsy moth. You do have one that is a very serious thing.

Senator ELLENDER. It is very serious.

PECAN MOTH

Senator HAYDEN. Will DDT get that pecan moth?

Mr. HOYT. I am not sure about that, but it gets most of the moths in that group. I am sure we have some information on that. Do you know, Mr. Hoffmann?

Mr. HOFFMANN. DDT is quite effective against several of the web-spinning moths that attack pecan and apple and other trees. And in the case of the Detana moths, some of those form a large tent enveloping the branches, and then of course the caterpillars feed on the leaves. DDT is very effective both by contact and in respect to consuming the leaves.

Senator ELLENDER. Is this web formed by the moths?

Mr. HOFFMANN. No, the web is formed by the larvae which have spinning glands. They tie the leaves and pull them together so that they can stay protected within the web and consume the foliage.

Senator ELLENDER. It is very convenient for them.

Mr. HOFFMANN. It is very convenient. It gives them protection from the birds and other animals or rodents that might climb up the trees.

Senator CORDON. Is the gypsy moth the reason for the defoliation of the locust trees in the country?

Mr. HOYT. No; that is the locust minor, which operates in a somewhat different way, Senator Cordon. The gypsy moth is responsible for the defoliation of trees on Cape Cod, and in an extensive area in that vicinity. That was until 2 or 3 years ago when the State of Massachusetts in cooperation with the Cape Cod folks raised the money and we furnished technical direction, I believe, and they sprayed that area and cleaned it up. They have had 2 years now of freedom from gypsy moths in the vicinity of Cape Cod.

I should have said that the gypsy moth occurs in the New England States and in New York State, in portions of eastern New York. Beyond that it does not occur in this country insofar as we know.

Senator HAYDEN. If there were thorough spraying conducted in that whole area the moth could be eliminated?

Mr. HOYT. The evidence all points that way. The material, when it is applied to the forest at a time when the insect is susceptible, which is in the spring, has brought about remarkably near to 100 percent destruction. It cleans the forested area in one application so that there is no evidence of infestation left. With that kind of a treatment eradication is practicable.

Senator HAYDEN. In Arizona, of course, the crop production is very high, and if you get a good crop you get money for it. The farmers now are budgeting their insect control along with other items of expense of growing a crop. If you have cotton you do it one way, with alfalfa another, and with cantaloupes another. They are using sprays from the air to a large degree.

How do you get at that in a forested area where the return is slow, and it is not a question of just saving one crop from an immediate loss, but where you have tree growth that is so slow if you put the expense for eradication on it now you do not get the return for a long

time to come. How do you get the owners of the land, in other words, to cooperate as readily as a farmer growing a 1-year crop?

Mr. HOYT. It is difficult, that is very true. This study group in their recommendations took that into account and recommended a combination of means of financing such an operation. They contemplated some from the Federal Treasury and some from the State treasury and some charges against the industry, and so on.

The gypsy moth is not exclusively a forest pest, it attacks the fruit trees of the region and a number of shade trees and other trees. It is a destructive insect in the green field and when pine is mixed in with hardwood it will defoliate pine trees also.

INSECTICIDAL RESIDUES

We are doing some work on the insecticides, particularly with the point of view of developing insecticides that can be used for the control of insects and not leave a harmful residue. The emphasis which is being placed on the presence of residues on food products and the need for expanding production makes it imperative that we have some materials that can be used to protect fruit crops from insects and at the same time not leave an injurious residue.

Senator HAYDEN. Has that been worked out in the apple crop?

Mr. HOYT. It has been worked in the apple crop to a very high degree, as you know. It is possible to wash the apples where it is necessary, and in many cases the materials are applied and so timed that they are dissipated by weather or the natural breakdown of the material by the time of harvest.

Senator HAYDEN. I have a recollection of the difficulty in shipping apples abroad because of the charge that they had never been properly cleaned when they left this country, and therefore they are unfit for human consumption.

Mr. HOYT. I did not know of apples that were turned down on account of insecticides, Senator. We had some cases where they claimed to find living insects on them. I would not know about that report; but in general, I think the residues on apples have been under pretty good control for the last several years.

We have a great deal of emphasis being placed on increased production. The agricultural goals are aimed pretty high, and we know that the land available for increased acreage is scarce. So that it has become necessary to increase the production per acre, and that tends to keep down insect attacks.

This same question is being investigated by the House committee, a special committee under Congressman Delaney. It is being studied by the committee on food protection of the National Research Council, and it is being investigated by the committee on insecticides of the American Medical Association. This shows that there is a great deal of interest in the field of insecticide residues now.

CONTROL OF HORN FLY

We have had some very good success with newer insecticides in controlling horn fly with cattle. The production of beef during the summer months when the flys are bad has been very gratifying, and also the increase in milk production in dairy herds has been very

satisfactory because of the practicability of relieving the cows or the meat animals from the attacks of the horn fly.

Senator HAYDEN. What is that fly?

Mr. HOYT. It is that little fly that keeps its wings outspread and settles on the animals in great numbers, and you usually find them in the area of the withers, because that is a point which the animal cannot protect himself.

Senator HAYDEN. Is it a blood sucker?

Mr. HOYT. Yes, sir.

Senator HAYDEN. What about this grub that gets in the backs of cattle and that injures the hide?

Mr. HOYT. Cattle grubs? Cattle grubs pass quite a period of their life inside of the animal, as you know. They enter through the feet just above the hoof and work their way up and finally emerge as grubs in the back, and they cause considerable injury to the animal as well as to the hide.

The ultimate control of the cattle grub has not yet been developed. It is conceivable that it will be possible to prevent, or to protect the animals from becoming infested.

Senator HAYDEN. I had understood that there was a high-pressure spray that they run the cattle through and spray them under high pressure which would kill the grub in the animal.

Mr. HOYT. At the present time that is the control. That is the best control we have. It is a high pressure spraying of the animals which destroys the grubs. A great deal of the harm of the infestation has taken place by that time, and the idea would be to try to keep them out of there. Of course, that is for the future.

We have several insecticides that give very effective control of the horn fly, and they are readily applied.

POLLINATION BY INSECTS INCREASES PRODUCTION

Then I want to say a word about the increased production of alfalfa, alfalfa seed, and clover seed which has been brought about through the use of pollinating insects. It very definitely has been established that without these visits of these insects to spread the pollen the production remains at a lower ebb.

Senator HAYDEN. They worked out a deal in Arizona where the grower of alfalfa seed made a record of what he had been producing in seed per acre, and the beekeeper came in and brought his bees in, and they divided the increased production and came out with pounds of seed per acre obtained, and that has been carried on that way.

I do know that they paid the beekeeper so much a hive for a certain length of time for bringing his stand of bees near the alfalfa.

Is there any other insect besides the bee that does that?

Mr. HOYT. There are a number of insects that perform that service, but the bee is the only one that is domesticated and controlled by man. Wild bees are excellent pollinators and big bumblebees are very good crop pollinators, but those wild insects are gradually disappearing. The bee is about the best we have.

Senator HAYDEN. They think now that they cannot grow cantaloups without the help of bees and get a crop in Arizona.

Mr. HOYT. That is right. They have increased their production of cantaloups by 25 percent.

Senator HAYDEN. Senator CORDON?

Senator CORDON. Sometime before the conclusion of this particular subject, I am interested in getting some information about the figures.

Senator HAYDEN. Go ahead.

Senator CORDON. I did not want to stop him, because what he has been telling us nas been very interesting to me, but I just wanted to ask him, Mr. Chairman, whether the group will be back at another time when we could get into the figures here in the budget.

PAY INCREASES

Senator HAYDEN. We can work on that right now.

Senator CORDON. Number one, is there any change in your budget request for 1953 over 1952?

Mr. HOYT. There is no increase in any item.

Senator CORDON. I notice that on page 229 of your justification, you show a decrease of $148,000.

Mr. HERRELL. That is partly to absorb the pay act costs during the fiscal 1953.

Senator CORDON. Do you mean that there was no pay act absorption in 1952?

Mr. HERRELL. There was a pay act absorption in 1952, and this is additional.

Senator CORDON. To that?

Mr. HERRELL. Yes, sir.

Senator CORDON. What was the amount of the absorption in 1952?

Mr. HERRELL. I would like to supply that for the record.

Senator CORDON. Would you do that, please?

(The information referred to follows:)

Approximately $72,000 will be absorbed under present plans. Of course much depends on the supplemental appropriation for this purpose.

Senator CORDON. I hope, Mr. Chairman, that we may get the subcommittee in executive session for a short summary by the budget officer here or somebody who can summarize the whole of these items agency by agency, so that we may see the extent to which the pay increase necessities were absorbed by each agency, or will be absorbed by each agency during the current year, and the extent to which that absorption will go into the coming year. Perhaps it is here, but if we had a summary on that I think it would save us a lot of time.

Senator HAYDEN. Is there any reason why that cannot be done?

Mr. ROBERTS. That can be done, sir. We have a table which shows the amount of the pay-increase costs in each of the fiscal years 1952 and 1953, by appropriation, together with the amount of the absorptions to be taken in each of the fiscal years 1952 and 1953. This table is based on the costs and absorptions shown in the 1953 budget.

Senator CORDON. That is fine.

Mr. ROBERTS. We could insert it in the record at this point. It is in the House hearings, but it should be available to this committee; also, we can furnish copies for each member.

Senator CORDON. That is not necessary if you have it in the record.

(The information requested follows:)

Estimated pay adjustment costs under Public Law 201, fiscal years 1952 and 1953

[NOTE.—Increases comparable to Public Law 201 are included. Amounts for 1952 are adjusted for comparability with appropriation structure proposed in 1953 budget estimates.]

Bureau or item	1952			1953		
	Total cost [1]	Estimated absorption	Anticipated pay adjustment supplemental	Total cost [1]	Estimated absorption	Budget estimates, 1953
ANNUAL APPROPRIATIONS FOR REGULAR ACTIVITIES						
Agricultural Marketing Act (RMA, title II)	$238,000	$16,000	$222,000	$276,300		$276,300
Bureau of Agricultural Economics	432,000	23,000	409,000	444,700	$80,004	364,696
Agricultural Research Administration:						
Office of Administrator	41,400	400	41,000	40,700	1,140	39,560
Research on agricultural problems of Alaska	22,000	2,000	20,000	22,000	2,000	20,000
Office of Experiment Stations:						
Payments to States, Hawaii, Alaska, and Puerto Rico	10,720	10,720		11,100	1,100	10,000
Salaries and expenses	24,125	1,125	23,000	24,045	2,135	21,910
Virgin Islands agricultural program				6,500		6,500
Total, Office of Experiment Stations	34,845	11,845	23,000	41,645	3,235	38,410
Bureau of Human Nutrition and Home Economics	92,500	6,500	86,000	92,700	12,700	80,000
Bureau of Animal Industry	1,779,200	214,200	1,565,000	1,841,855	423,855	1,418,000
Bureau of Dairy Industry	194,000	6,000	98,000	111,800	15,800	96,000
Bureau of Agricultural and Industrial Chemistry	503,900	53,900	450,000	516,700	127,700	389,000
Bureau of Plant Industry, Soils, and Agricultural Engineering	774,400	16,400	758,000	819,000	123,000	696,000
Bureau of Entomology and Plant Quarantine (salaries and expenses)	870,000	72,000	798,000	881,000	231,000	650,000
Total, Agricultural Research Administration	4,222,245	383,245	3,839,000	4,367,400	940,430	3,426,970
Control of forest fires	168,000	168,000		221,600	221,600	
Forest Service:						
Salaries and expenses	2,169,000	369,000	1,800,000	2,431,287	812,691	1,618,596
Forest development roads and trails	462,500	462,500		428,000	428,000	
Smoke-jumper facilities				640		640
Acquisition of lands for national forests:						
Weeks Act	1,200	1,200		1,350	1,350	
Superior National Forest	640	640		640	640	
Acquisition of lands from national forest receipts	1,200	1,200		1,200	1,200	
State and private forestry cooperation	54,492	6,492	48,000	55,000	12,000	43,000
Cooperative range improvements	34,000	34,000		37,000	37,000	
Total, Forest Service	2,723,032	875,032	1,848,000	2,955,117	1,292,881	1,662,236
Flood control	373,229	373,229		394,317	394,317	
Soil Conservation Service	3,985,852	485,852	3,500,000	4,410,000	1,070,000	3,340,000
Water conservation and utilization projects	20,211	20,211		15,500	15,500	

Flood control	373,229	373,229		394,317	394,317	
Soil Conservation Service	3,985,852	485,852	3,500,000	4,410,000	1,070,000	3,340,000
Water conservation and utilization projects	20,211	20,211		15,500	15,500	
Production and Marketing Administration:						
Conservation and use of agricultural land resources	332,663	332,663		339,420	339,420	
Agricultural production programs	205,620	205,620		212,510	212,510	
Sugar Act program	74,280	74,280		75,836	75,836	
National school-lunch program	106,383	106,383		107,395	107,395	
Marketing services	800,000	60,000	740,000	808,280	143,280	665,000
Total, Production and Marketing Administration	1,518,946	778,946	740,000	1,543,441	878,441	665,000
Commodity Exchange Authority	49,100	37,100	12,000	56,800	6,800	50,000
Federal Crop Insurance Corporation (operating and administrative expenses)	342,346	342,346		402,800	56,600	346,200
Rural Electrification Administration (salaries and expenses)	553,575	13,575	540,000	572,865	147,865	425,000
Farmers Home Administration (salaries and expenses)	2,057,750	312,750	1,745,000	2,054,100	506,100	1,548,000
Farm Credit Administration (salaries and expenses)	193,500	162,500	31,000	197,500	29,500	168,000
Extension Service:						
Payments to States, Hawaii, Alaska, and Puerto Rico	17,000	17,000		17,120	120	17,000
Salaries and expenses	60,000	2,000	58,000	62,000	7,000	55,000
Total, Extension Service	77,000	19,000	58,000	79,120	7,120	72,000
Office of the Secretary	171,712	11,712	160,000	175,650	37,650	138,000
Salaries and expenses, Defense Production activities	314,820	314,820				
Office of the Solicitor	183,100	11,100	172,000	186,500	30,500	156,000
Office of Foreign Agricultural Relations	42,650	2,650	40,000	54,448		54,448
Office of Information	50,285	2,285	48,000	49,972	5,972	44,000
Library	49,770	3,770	46,000	53,980	13,217	40,763
Total, annual appropriations for regular activities	17,767,123	4,357,123	13,410,000	18,512,110	5,734,497	12,777,613
CORPORATE ADMISTRATIVE EXPENSE LIMITATIONS						
Commodity Credit Corporation	1,090,000	10,000	1,080,000	1,154,219	181,219	973,000
Federal Intermediate Credit banks	55,000	1,244	53,756	90,000		90,000
Production Credit Corporations	50,000	985	49,015	65,000		65,000
Total, Corporate Administrative expense limitations	1,195,000	12,229	1,182,771	1,309,219	181,219	1,128,000
SPECIAL ACTIVITIES						
Research on strategic and critical agricultural materials	32,600	600	32,000	40,100	100	40,000
PERMANENT APPROPRIATIONS						
Expenses, brush disposal, Forest Service	17,000	17,000		26,000	26,000	
Roads and trails for States, national forests fund	111,000	111,000		114,000	114,000	
Removal of surplus agricultural commodities	293,554	293,554		307,650	307,650	
Perishable Agricultural Commodities Act fund	33,835	33,835		34,200	34,200	
Total, permanent appropriations	455,389	455,389		481,850	481,850	

[1] Individual items exclude pay adjustment costs applicable to reimbursable obligations.

FACTORS AFFECTING DEPARTMENTAL EMPLOYMENT

Senator ELLENDER. In that connection, have you the same number of people employed as you had last year?

Mr. ROBERTS. We have fewer people employed than last year.

Senator ELLENDER. Due to what?

Mr. ROBERTS. Due to two or three things.

Senator ELLENDER. Principally due to the shortening of the leave with pay?

Mr. ROBERTS. Due to reductions which were made in the 1952 appropriation, Senator Ellender, and due to some absorption of the pay cost increase in 1952.

EFFECT OF NEW GRADUATED LEAVE LAW

Senator ELLENDER. To what extent has the decrease in leave affected the number of employees in your Department?

Mr. ROBERTS. That is very difficult to answer on a general basis, Senator Ellender, for this reason: you remember that the new regulation decreased the number of days of leave——

Senator ELLENDER. That is right.

Mr. ROBERTS. And it was estimated by the Budget Bureau that that would permit a reduction in funds without reducing the man-days or man-years available for a given job. That works out very well where you have a large group of people who can be used interchangeably on the same work, but it does not work out where you have a small group of people who cannot be used interchangeably, or in the field offices, such as the Market News Service, where you have only one or two men in each office.

Senator CORDON. How can you have a reduction in funds without a reduction in personnel?

Mr. ROBERTS. The Budget Bureau in estimating the possible absorptions that might be made in the pay costs under Public Law 201, estimated that the new legislation reducing the number of days of annual leave would provide additional man-days of effort because people would be working more days during the year.

Senator CORDON. I understand.

Mr. ROBERTS. That is, more than they would under the old legislation. Thus, they reasoned, you could absorb some of the increased pay cost.

Senator ELLENDER. And you pay them the same salaries. You have fewer men and you are able to do that? I just cannot follow you.

In other words, if your leave has been shortened that means, to my mind, that you will have to use fewer people.

Senator CORDON. You have either got to reduce the number of people, or the same number of people are going to do more work for the same amount of money.

Senator ELLENDER. You cannot pay them the same, Senator Cordon. You have a limit there of appropriations. I just do not see how, with the same appropriation, you can keep the same number of people on, because an extended leave means that you must have more people employed, but with a shortening of that leave it means that you have to have fewer people employed.

Mr. ROBERTS. Let us take this case, and perhaps it will clear it up. Assume you had a bureau with 100 people, all of whom were getting 26 days of annual leave under the old law, and assume that the cost was $400,000 for that staff. The new leave law became effective and on the average reduced the number of days of annual leave so that each of those employees take 4 days less in annual leave. That assumes, of course, that they were all taking 26 days last year, and they are all going to take 4 days less this year. That means those same people will be at work 4 days more than they were last year.

Assuming that it works out on that basis, you could absorb part of your increase for the pay costs, without reducing the level of the program because the number of days that each employee is at work has been increased.

Senator CORDON. Let me interrupt you a moment so that I can follow you. You have brought the pay increase into the picture.

Mr. ROBERTS. That is correct.

Senator CORDON. Were you concerned with the pay increase?

Senator ELLENDER. No.

Senator CORDON. I did not think you were. We are liable to be misled, and none of us will understand what you are explaining after you get through.

Mr. ROBERTS. They are very much related, Senator Cordon. It is the basis for the reduction of $148,000 such as this bureau has just stated they propose to take in 1953.

Senator CORDON. Then you are not discussing last year's appropriation actually made and in operation, but you are discussing last year's appropriation plus the expected or anticipated appropriation to meet the increased pay.

Mr. ROBERTS. Yes, sir.

Senator CORDON. Is that correct?

Mr. ROBERTS. That is correct, sir. At the opening session of the hearings before this committee I took a few moments to discuss—and I am sure Senator Hayden will remember since he was present—the manner in which these estimates and justifications were made up. The budget estimates for 1953, and the justification books that you are using, compare the financial needs for 1953 at the new pay rates with the funds actually appropriated for 1952 plus the supplemental appropriation for the increased pay cost in 1952 which is now pending before the Senate committee.

Senator HAYDEN. There are really three factors that affected the amount of money you spent last year. One was the pay increase, another was the reduction in annual leave, and the third was where there was a blanket cut, a percentage cut, that affected you.

Mr. ROBERTS. Yes, sir.

Senator HAYDEN. This year, as far as you know, the budget has included money enough to meet the pay increase less the saving that would accrue by reason of the reduction in annual leave.

Mr. ROBERTS. Yes, sir.

Senator HAYDEN. And what you are going to be concerned with immediately in order to meet the payroll and what is going to be required, is in the supplemental bill which is now pending before the full committee.

Mr. ROBERTS. For 1952, yes, sir.

Senator HAYDEN. If that does not come up in what you ask for, it is going to have a very serious effect on what you will have available during the next fiscal year.

Mr. ROBERTS. Except for the reduction that was made in the general provisions of the third supplemental appropriation bill—the amendment which has been referred to as the Davis amendment—the bill carries what was proposed in the estimates for 1952, and what is reflected in the 1952 column of the tables and justifications which you gentlemen have here.

Senator ELLENDER. Before this graduated leave was enacted by the Congress, you certainly required under the previous law more money to operate or to pay the same number of people than you now need; is that not true?

Mr. ROBERTS. Yes; where you had work which was interchangeable; yes, sir.

Senator ELLENDER. I do not quite understand that work which is interchangeable. What do you mean by that?

Mr. ROBERTS. If you have a Market News Office with one employee, providing market reporting services, that employee has to be on the job, or some employee has to be on the job each working day. The mere fact that a particular employee who is permanently assigned at that station has his annual leave reduced by 4 days does not necessarily mean that you are going to have 4 days of saving in that appropriation.

Senator CORDON. Why not?

Mr. ROBERTS. Because someone has to be on the job, sir.

Senator CORDON. That is the point. If he is off for 26 days and then someone else would be there for 26 days; if he is off for 22 days, then they are there for 22 days, but somewhere else for that other 4.

Mr. ROBERTS. Yes; again theoretically, because many employees have not taken the 26 days' leave. Employees have been losing accumulated annual leave each year.

Senator CORDON. I understand that. You are the one who picked out this method of explaining it.

Mr. ROBERTS. The reduction in annual leave has been reflected in the estimates, Senator Cordon. The reduction of $148,000 in 1953 below 1952 in the case of this Bureau is an additional absorption of pay costs predicated on that very thing.

Senator ELLENDER. You have cited an instance of your Marketing News. Have you not some bureaus with quite a large number of people where the work is not interchangeable as you have just indicated?

Mr. ROBERTS. Where it is interchangeable?

Senator ELLENDER. Where it is not.

Mr. ROBERTS. The Market News is a good example of where it is not interchangeable.

Senator ELLENDER. I know it is a good example, but I am saying to you: Are there not other bureaus, say, in Washington, where you have maybe as many as two or three hundred people employed where this work is not interchangeable as in the case of the Marketing Bureau?

Mr. ROBERTS. It is just the reverse that I intended to imply, Senator Ellender. In the Market News Service you have small groups or just one or two men in certain locations where the work is not interchangeable. Where you have the large groups such as you mention,

it would usually work out very well; we have some of those and they are reflected in the reductions on this table.

Senator ELLENDER. Then as I understand it, this reduction in the number of hours does not affect your budget any, that is, it does not decrease it; it remains the same. There is no saving as we have anticipated.

Mr. ROBERTS. No; as you will see when you put this table in the record, there is a saving.

Senator CORDON. There is a saving of $148,000, is there not?

Mr. ROBERTS. In this particular Bureau, yes, sir.

Senator CORDON. That is the saving in the Bureau if you had not had any pay increase at all, but had cut down the leave, and so forth. Theoretically, you could have done the job for this agency for $148,000 less than you did it last year.

Senator ELLENDER. And having the same number of people.

Senator CORDON. No; in that event, you would have cut the number of people.

Senator ELLENDER. That is what I asked him.

Mr. ROBERTS. You cut the number of people because the people remaining on the rolls will be working more days.

Senator CORDON. That is right.

Mr. ROBERTS. Senator Cordon is right.

Senator HAYDEN. Now, are you finished?

Senator CORDON. With this statement, I think that will be all right.

Senator HAYDEN. The committee will stand in recess until 10:30 tomorrow morning.

(Whereupon, at 12:15 p. m. Monday, March 31, 1952, the subcommittee was recessed to be reconvened at 10:30 a. m., Tuesday, April 1, 1952.)